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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/818,969	03/27/2001	Shoji Kotani	15162/03460	9858

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SIDLEY AUSTIN BROWN & WOOD LLP
717 NORTH HARWOOD
SUITE 3400
DALLAS, TX 75201

EXAMINER	
SCHECHTER, ANDREW M	

ART UNIT	PAPER NUMBER
2871	

DATE MAILED: 04/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/818,969	KOTANI ET AL.	
	Examiner	Art Unit	
	Andrew Schechter	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 November 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) *13-20* is/are withdrawn from consideration.

5)☒ Claim(s) *21 and 22* is/are allowed.

6)☒ Claim(s) *1-3,5 and 7-12* is/are rejected.

7)☒ Claim(s) *4 and 6* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 21 November 2003 have been fully considered but they are not persuasive.

The applicants have amended claim 1 to recite "thereby causing the first region to change from a base color to a first color" in the step (a) and "thereby causing the second region to change to a second color, the second color being different from the first color" in step (b). The applicants argue that these amended limitations are not disclosed by *Naito*. This is not persuasive.

First, *Naito,* as applied previously, does disclose these additional limitations. The printed portion in *Naito* inherently has two halves, which are the first and second regions. The base color is white, the first color is blue, and the second color is white. *Naito* therefore does disclose the additional limitations so the previous rejection under 35 U.S.C. 102 is repeated below, modified appropriately.

Second, the examiner notes that in *Naito* the change "to the second color" is from blue, rather than from the base color. Were the second phrase to read "thereby causing the second region to change <u>from the base color</u> to a second color, the second color being different from the first color", this embodiment of *Naito* would no longer anticipate the claim. However, *Naito* discloses forming a multicolored image using various colors [col. 10, lines 5-10, for instance], and using pixels of different colors to generate a

multicolored image is, of course, very well-known in the art, so such a change would not necessarily distinguish the claim from the prior art.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 5, 7, 8, and 10-12 are rejected under 35 U.S.C. 102(b) as being anticipated by *Naito,* U.S. Patent No. 5,869,420.

Naito discloses a method for recording an image on a thermosensitive image bearing medium that contains liquid crystal material exhibiting a cholesteric phase at a temperature range higher than room temperature [abstract, col. 13, line 24 - col. 18, line 8, especially col. 16, lines 65-67].

The method comprises the steps of: (a) heating the material in a first region at a first temperature for a first time period by applying a first energy (with a thermal head set at 12V, determining the temperature, for 0.8 milliseconds, which together define the first energy – col. 25, lines 7-12), thereby causing the first region to change from a base color [white] to a first color [blue]; and (b) heating the material in a second region at a second temperature for a second time period by applying a second energy (with a thermal head set at 10V, determining the temperature, for 1.5 milliseconds, which together define the second energy – col. 25, lines 14-18), thereby causing the second

region to change to a second color [white] which is different from the first color [blue], where the first temperature is larger than the second temperature, since 12V is larger than 10V, and the first time period 0.8 ms is shorter than the second time period 1.5 ms. This is done to a "printed portion" [col. 25, line 11], whose two halves are the first and second regions. Claim 1 is therefore anticipated.

Naito describes the two steps being repeated through 100 cycles [col. 25, line 25], so the recording process described includes both step (a) before step (b) and step (a) after step (b), so claims 2 and 3 are also anticipated. *Naito*'s use of a thermal head [col. 25, line 8] implies the inherent step of generating first and second signals (to control the action of the thermal head) based on image data, respectively reproducing first and second colors (blue and white), and the applications of the first and second energies are executed by driving a writing head based on the signals; claims 5 and 11 are therefore anticipated. The signals have a waveform comprising at least one pulse, and the pulses determine the first and second time periods, so claims 7 and 8 are also anticipated. *Naito* discloses that, in place of the thermal head, a laser optical unit and photothermal converter ("a light absorbing layer having an absorption band in the wavelength of the laser beam") can be used [col. 24, lines 18-33]; claim 10 is therefore anticipated. *Naito* also discloses the step of quenching the medium after the steps of (a) and (b) [col. 5, lines 35-53], so claim 12 is anticipated.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Naito*, U.S. Patent No. 5,869,420 as applied to claims 1-3, 5, 7, 8, and 10-12 above, in view of *Weaver et al.*, U.S. Patent No. 5,922,528.

Naito discloses determining the time periods by the pulse widths of the applied energies, rather than by the number of pulses. *Weaver* discloses an analogous thermal imaging process, and teaches that "[i]n a particularly useful embodiment the pulses are of fixed voltage and duration and the thermal energy delivered is then controlled by the number of such pulses sent" [col. 1, lines 25-28]. It would therefore have been obvious to one of ordinary skill in the art to determine the time periods (and hence the amount of energy) by varying the number of fixed-length pulses as taught by *Weaver*, as opposed to varying the length of a single pulse, as *Naito* does, motivated by the teaching of *Weaver*. Claim 9 is therefore unpatentable.

Allowable Subject Matter

6. Claims 4 and 6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Claims 21 and 22 are allowed.

8. The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not disclose the method of claim 1 with the additional limitation that the steps are executed simultaneously. Claim 4 would therefore be allowable if rewritten appropriately.

The prior art does not disclose the method of the original claim 1 with the additional limitation that the steps are executed simultaneously. Claim 21 is therefore allowed.

The prior art does not disclose the method of claim 1 with the additional limitation that the colors are represented by wavelengths with the second wavelength longer than the first wavelength, since white is a spectrum of wavelengths and not a single wavelength. Claim 6 would therefore be allowable if rewritten appropriately.

The prior art does not disclose the method of the original claim 1 with the additional limitation that the colors are represented by wavelengths with the second wavelength longer than the first wavelength, since white is a spectrum of wavelengths and not a single wavelength. Claim 22 is therefore allowed.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Schechter whose telephone number is (571) 272-2302. The examiner can normally be reached on Monday - Friday, 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

DUNG T. NGUYEN
PRIMARY EXAMINER

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Andrew Schechter
16 April 2004

DUNG T. NGUY
PRIMARY EXA